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THE FUNCTIONS OF PRODUCE EXCHANGES

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Modern produce exchanges are the product of the last sixty years and have developed in all the leading grain, cotton and provision centers in response to the desire for large and well organized markets. Their ancestry has been traced back to the large and flourishing fairs of several centuries ago, which prevailed in many parts of Europe. Probably the first instance of a modern exchange is that of the Antwerp Bourse,¹ established in the middle of the sixteenth century, and followed soon after by the Royal Exchange of London. Commodities were bought and sold here upon certificates, although the general warehouse or elevator receipts, to be described shortly, were developed much later.

With the development of enormous agricultural areas in the nineteenth century large surplus stocks of agricultural staples were created which far exceeded local demands. This surplus stock required a world market for its proper distribution to the consuming centers, and the development of such a market was greatly facilitated by the tremendous strides of the last century in methods of transportation and communication. Instead of the local fair, the trade now required a market where buyers and sellers from all parts of the world might meet to make transactions in person or by representatives. Convenience and promptness in buying and selling now became essential. Uniformity of usages, high standards of conduct, detailed organization of every branch of the trade, and efficiency in the operation of the business became highly desirable. And so about the middle of the nineteenth century numerous exchanges, sometimes also called boards of trade, chambers of commerce, and bourses, were organized with a view to standardizing trade and giving to it the conditions just enumerated. The Chicago Board of

¹For a brief account of the early development of produce exchanges, and the reasons for their development, see Mr. John C. F. Merrill's series of articles published in the "Chicago Commerce" during March and April of 1910 on the "Study of the Economic Function of Produce Exchanges in the System of Production and Distribution." Mr. Merrill is President of the Board of Trade of the City of Chicago, and his article contains many valuable suggestions.

Trade was incorporated in 1859, although organized in 1848. The New York Produce Exchange, having existed as an unincorporated association since 1850, was incorporated in 1862. The Merchants' Exchange of St. Louis assumed the characteristics of an exchange in 1854. The New York Cotton Exchange was organized in 1870, to be followed by the Minneapolis Chamber of Commerce in 1881, and the New York Coffee Exchange in 1882. Among the other American produce exchanges where buying and selling is conducted may be mentioned those at Duluth, Kansas City, Mo., Omaha, Milwaukee, New Orleans, Winnipeg, Toledo, Detroit and Buffalo.²

Unlike the American stock exchanges, which are private, voluntary, unincorporated associations, our produce exchanges are incorporated bodies. Their rules, organization and methods of procedure resemble each other with few exceptions. In recent years, also, there has been a tendency towards co-operation between the several exchanges similar to the movement in favor of creating an association or trade organization for nearly every other line of commerce in the country. In 1909 the grain exchanges, dealing in grain and provisions, saw fit to create a "Council of North American Grain Exchanges." The exchanges themselves constitute the membership, each being represented by delegates; and at the last meeting they numbered thirteen, viz.: Those of Chicago, Kansas City, Toledo, St. Louis, Duluth, Omaha, New York, Buffalo, Baltimore, Philadelphia, Minneapolis, Milwaukee and Wichita. The object of this organization is "to increase the efficiency and extent of the usefulness of exchanges trading in agricultural products; to promote uniformity in customs and usages; to facilitate the adjustment of business controversies and differences that might arise between members of the various exchanges; to render enforceable the principles of justice and equity; to encourage the enactment of wise and helpful legislation; to enlighten the general public as to the important service rendered by exchanges in handling agricultural products; to cultivate reciprocal relations between the trade of North America and that of other countries; to obtain by affiliation those greater legitimate conditions unattainable by separate and local effort; and,

²For a brief description of most of these exchanges and a statement of their distinctive features, see the articles in this volume which deal with several of the important exchanges; and also the series of short articles originally published in the "National Hay and Grain Reporter" of May 20, 1911, and reproduced on pages 227-252 of this volume.

generally, to advance the welfare of the grain trade, its allied interests and all those engaged in the production, handling, marketing and consumption of agricultural products."

I. THE GENERAL OBJECT OF EXCHANGES

A modern produce exchange may be defined simply as an organized market place which enables people to buy and sell freely certain commodities either in person or through a broker; and which in order to facilitate such trade has for its fundamental objects the promotion of uniformity in customs and usages, the inculcation of principles of justice and equity in trade, the facilitation of the speedy adjustment of business disputes, the dissemination of valuable commercial and economic information, and the securing to its members all the benefits of co-operation.³ The exchange itself is not organized for the making of money, and does not fix prices or make transactions in the trade as an organized body. It is merely instrumental in affording a convenient market place, in regulating trade, and in disciplining the conduct of its members. Its members act on their own responsibility. They may do as much business as they like, provided they conform to the standards which the rules of the exchange prescribe for the regulation of the trade.

II. THE REGULATION OF BROKERAGE TRANSACTIONS

In the free buying and selling of our vast crops by thousands of middlemen, it is not at all surprising that many questionable practices should arise. Great importance should therefore be attached by all interests coming in contact with the market to the disciplinary rules which have been adopted for the regulation of brokerage transactions, and the maintenance by this means of a standard of commercial honor in the trade very much higher than would otherwise be the case.

Practically all the exchanges have adopted similar rules in this respect. The greatest care is exercised in electing members to the exchange, and when elected, the new member obligates himself to abide by the constitution of the exchange and all subsequent amendments thereto. Expulsion is the penalty in case a member fails to comply with the terms of any business obligation or with the award

³These fundamental objects of a produce exchange will be found enumerated in the constitution of every leading American exchange.

of any committee of arbitration; or in case he deals in differences in the fluctuations in the market or is connected with any bucket-shop. All orders must be executed in the open market and no customers' trades can be taken by members for their own account, either directly or indirectly, on pain of expulsion. Expulsion is also the penalty for making or reporting any false or fictitious purchase or sale, or for being guilty of bad faith, dishonorable mercantile conduct, or any attempt at extortion; and when expelled no member may transact business upon the floor in his own name or through any broker or employe. No member is allowed, under any circumstances, to be both principal and agent in any transaction; nor may a member either by his own act or by the act of another member or broker be placed in the position of agent for both seller and buyer. In all trials the exchange possesses the power to call witnesses or to demand the papers of any firm connected with the case; and suspension is the penalty for failure to testify or produce the records.

For the benefit of the trade the exchange regulates the inspection, grading, weighing, storage and shipment of grain, the brokerage charges for the various types of services rendered, and the deposits necessary to secure the fulfilment of time contracts. Trade committees are appointed for the several kinds of produce to decide disputes and interpret the usages prevailing in each. Weighers and inspectors are appointed and licensed, and agreements are frequently effected with warehousemen and transportation companies. The rights of the respective parties in the various kinds of contracts are minutely prescribed; the settlement of such contracts is outlined in detail; and in case of insolvency, the method of procedure is carefully defined. And lastly, among the many other rules enforced, should be mentioned the practice of arbitrating all business disputes, quickly and cheaply, and with the understanding that purely technical provisions should be no pretext for the avoidance of contractual obligations. So high is the standard of the decisions of the committees of arbitration that they are often given the force of law by the highest courts.

III. CASH OR SPOT MARKET

As regards the largest exchanges of the country, sales may be divided into two main classes, viz.: (1) "cash" or "spot" transac-

tions, and (2) sales for future delivery, usually called "futures." The difference between these two types of transactions consists merely in the time when the title to the property changes. The "cash" transaction is a "sale" as soon as completed, while the "future" contract is defined as "a contract to buy, or a contract to sell at some definitely prescribed future time." It is common for the press and the public to attach undue prominence to the buying and selling for future delivery, and to overlook the fact that the original and basic object of the exchanges was to furnish a convenient meeting place for the buying and selling of "cash" grain, cotton and provisions, and that to-day an enormous volume of such cash business is transacted upon the "cash" tables which line the floor of every exchange. In fact, it is only the largest exchanges that afford a market for futures, while most of the smaller exchanges are known exclusively as cash markets.

As regards this cash market it is not generally realized that the same contest of intelligence between buyer and seller takes place, the one striving for the lowest possible price and the other for the highest, as in the buying and selling of all other commodities. The great variety of business interests participating in this organized cash market, and its relative importance when compared to the market for futures is well brought out in President Carhart's article on "The New York Produce Exchange."⁴ Moreover, the methods and contracts used in this market need no extended treatment here, the reader being referred to the article of Mr. Siebel Harris on "Methods of Marketing the Grain Crop."⁵ Suffice it to say that the operation of brokers on an exchange floor are, as President Merrill, of the Chicago Board of Trade, points out, "not unlike in substance, an ordinary auction where the price that the article brings is determined by the demand of the bidders for the article being sold. But here the similarity stops, for commodities are dealt in upon the exchange floor which have a world market, whereas in the auction room the price obtained may be determined by the individual fancy or cupidity of the buyers." The Chicago Board of Trade, as he explains, "is nothing more or less than a great central market for the buying and selling of grain and produce. . . . It is simply a meeting place for buyers and sellers, an institution

⁴ See page 206.

⁵ See page 36.

maintained by nearly eighteen hundred brokers for the single advantage that thereby time and labor may be saved in the execution of orders to buy, or, sell grain, or provisions. It is not contended that it would not be possible to market grain if every exchange were closed, any more than it would follow that the world would be in darkness if lighting by electricity had never been discovered, or that business could not be transacted without the telephone, the telegraph or the typewriter. Even without the exchange a broker could sell a consignment of grain or provisions by traveling the length of South Water street, or communicating with several hundred millers or grain dealers throughout the country. But modern business, and particularly the business of marketing the grain and provisions of this country, has grown to too great proportions to permit of such an unwieldy and costly system."

IV. THE BUYING AND SELLING OF FUTURES

No feature of our produce exchanges has met with so much adverse criticism as the buying and selling of produce "for future delivery," especially in view of the fact that such dealings are inseparably connected with the practice of "short-selling." In later sections of this paper it will be shown that the future contract and the short sale are essential for many reasons, and that the produce business of the country could not be conveniently conducted without their use. The object of this section, however, is merely to show in brief the manner in which this market for "futures" is organized.

The financial page of any important daily newspaper will furnish a table of quotations for wheat, corn, oats, cotton, and coffee arranged by months. On October 10, 1910, the Chicago quotations for wheat were as follows:

Wheat.	Open.	High.	Low.	Close.
December97 $\frac{7}{8}$.98 $\frac{5}{8}$.97 $\frac{7}{8}$.98 $\frac{1}{4}$
May	1.03 $\frac{3}{4}$	1.04 $\frac{5}{8}$	1.03 $\frac{3}{4}$	1.04 $\frac{1}{4}$
July99	.99 $\frac{3}{8}$.99	.99 $\frac{3}{8}$

This table shows that dealers on the Chicago Board of Trade were on this day selling wheat for future delivery in some designated future month at an agreed price. In the case of "May Wheat" in the above table the dealer definitely agreed to sell a

certain quantity of "contract grade" wheat at \$1.04¼. This wheat the seller can deliver at any time between the first and last days of May, but when the last day of May arrives he must deliver the quantity sold at the price originally agreed. It will be noticed that May wheat is selling considerably higher than December wheat, and a moment's reflection will show that this should be the case because between December and May many charges have accumulated which must be included in the price. Thus, during this interval, the interest on the capital invested must be allowed for; storage charges must be met according to the advertised rates of the elevators; and insurance premiums must be paid. The dealer, in other words, must keep in mind all these accumulating charges, and they should be reflected in the price of wheat sold for delivery in May, as compared with the price of the same wheat when sold for December delivery. But it will be asked, why should July (1911) wheat be sold at 99¾c., when May wheat, representing an earlier month, sells on the same day at \$1.04¼? Here it must be remembered that these prices, besides including the expense items just mentioned, must also reflect the discounting process which speculators always have in mind when selling grain for future delivery. Consequently, we find dealers on October 10, 1910, selling wheat for delivery in July, 1911, and in doing so they are already looking towards next year's crop, which begins to come on the market in July, whereas May wheat has reference to the old crop harvested in 1910. Many, if not most of the dealers selling this wheat for future delivery probably do not possess the grain but are selling short, i. e., are selling something which they do not now possess, expecting, however, when May or July arrives, to go into the market and buy the same for delivery purposes.

In selling for future delivery, unless the contrary is expressly stipulated, the contract calls for the delivery of "contract grain." On the Chicago Board of Trade this term comprises as regards wheat "No. 2 red winter," "No. 1 Northern spring" and "No. 2 hard winter wheat." In other cities different requirements for contract grades exist, i. e., the contract grade is adapted to the necessities of the particular market. Thus, on the Minneapolis Chamber of Commerce, situated in the heart of the Northern spring wheat district, "No. 1 Northern spring" wheat constitutes the contract grade. In Duluth "No. 1 Northern spring" wheat constitutes

the contract grade, but "No. 2 Northern" may be delivered on contract at 5 cents per bushel under the price of the former. Again, on the New York Produce Exchange, where the market for grain is not nearly as large as in Chicago, a very much larger latitude is shown. The contract grades in this city comprise "No. 2 red winter" and "No. 1 Northern spring" wheat, but "No. 2 Northern spring" wheat may be delivered at a discount of 5 cents and "No. 3 hard winter" wheat at a discount of 7 cents. This latitude is permitted for the purpose of relieving short sellers from the requirement of delivering a particular grade when the "cornering" of that grade might make it impossible for them to purchase the same for delivery on their contracts. For the same reason the contract for future delivery used in the cotton and coffee markets permits the delivery of a large number of grades.

It is also essential that both parties to a future contract should know that the agreement will be fulfilled at the time when the delivery is to be made. If a miller buys 10,000 bushels of wheat in October for delivery next July it is only reasonable that he should have some security which will protect him against failure on the part of the seller to deliver this quantity in the specified month. Similarly, the seller should be in a position to demand security from the miller so that he may rely upon the buyer's financial ability to take the wheat at the contract price when the time arrives for delivery.

With a view to protecting both parties to the contract the rules of our exchanges authorize both buyer and seller to ask of each other the deposit of a margin equivalent to 10 per cent of the market price, this margin to be increased or decreased by each party according to fluctuations in the market. Each party has a lien on this margin and in case of non-fulfilment of the contract the deposit becomes available so that, in view of the original market price, the contract may be liquidated without loss to the party not at fault. These deposits are made in accordance with the rules of the exchange and can be left either with some official of the exchange, designated for that purpose, or with some bank approved by the exchange.

V. EXCHANGE REGULATIONS FACILITATING TRADE OPERATIONS IN THE "CASH" AND "FUTURE" MARKETS

The value of exchange rules supervising the conduct of members has already been referred to. But special reference should be made to the supervision of exchanges over the inspection, grading, weighing and storing of produce, and the issuance of "general warehouse receipts" to represent title to the same. Such supervision is of the utmost importance to the proper operation of large "cash" and "future" markets. By virtue of this efficient supervision, as stated by President Merrill, of the Chicago Board of Trade: "both the buyer and the seller are guaranteed a square deal, both as to the quantity and quality of the grain which changes title."

As H. C. Emery states in his "Speculation on the Stock and Produce Exchanges of the United States": "It was only with the development of the warrant and grading system that the real 'future' became possible." The first "warrant" or "warehouse receipt" to develop was a special receipt which represented a specific lot of produce, but, since no general grading system existed, this receipt was not adapted for the making of sales for forward delivery. It was in the metal market that a "general receipt," which represented not a particular lot deposited in some designated place but, instead, *any* lot of a given amount and grade, was first used. Such general receipts were the result of a thorough system of inspection and grading which made possible the storing of any amount of a given commodity of a given grade in bulk. Identification of particular "lots" now became unnecessary. Numerous lots of the same grade, although owned by different persons, could be stored in bulk and taken out later on the representation of general receipts issued at the time when the commodity was deposited. In the meantime, however, while the commodity was stored in bulk, title to its ownership could be readily transferred from hand to hand, the receipt being transferable by endorsement without the actual transfer of the goods represented. In the grain, cotton and coffee markets such general receipts became the rule after 1860. As Mr. Emery well explains: "With the enormous storings of grain in bulk, however, the difficulties of delivering at any moment the actual wheat deposited on a warrant became increasingly great. Consequently a change was made to the system of general receipts.

Grain received by the railroad or the warehouse was properly graded and classified, and all the grain of the same grade was stored in bulk without regard to particular lots. A delivery of the receipt constituted a fulfilment of a contract, and, in fact, the receipts themselves might be considered the commodity bought and sold since they were receipts to receive a certain amount of the given grade on demand."

To make possible such convenient transfers of property from buyer to seller it is essential that all the factors preliminary to the issuance of such general receipts should be thoroughly supervised, so that the genuineness of their face value will go unquestioned. This the exchanges are instrumental in doing. The system of inspection, grading and weighing, which they have adopted with the assistance of the several state governments, has reached the highest standards. Next, the rules of the exchange look to the supervision of the storage of grain in the great collecting and distributing centers. According to the Chicago Board of Trade, for example, the owner of an elevator, whose holdings of grain can be delivered on contracts made on its floor, must be of unquestioned financial standing, and his books are subject to examination by the properly constituted committee of the exchange as often as is deemed advisable. The elevator must be of the most improved character. It must be properly situated and must have proper connection with steamboat lines and trunk lines. The reasons for these requirements are apparent, because when grain is sold for future delivery on an exchange, it is essential that the buyer should know that when the grain is delivered it will not be stored in a location which will put the buyer to any disadvantage. If an elevator complies with all these requirements, the rules of the Chicago Board of Trade designate it as "regular"; and it is only grain located in regular elevators which is available for delivery on future contracts made on its floor.

Having carefully supervised the inspection, weighing, grading and storing of the grain, it is now possible to store the enormous consignments of particular grades of grain in bulk, and permit the elevator companies to issue general receipts to the owners of this grain, provided that these receipts are so carefully drawn as to be readily transferable upon sale or acceptable as collateral. Here, again, the exchanges exercise a supervisory influence in prescribing

the form such receipts must take. All receipts issued by a given firm from any one of its elevators must be consecutively numbered, and are good only for one year. The receipt is dated and gives the name of the company issuing it, the name of the elevator, the quantity of the grain represented, the particular grade of the grain, and also certain stipulations limiting the liability of the company, especially with reference to loss by fire or heating. The receipt is subject to the regular advertised storage charges, and stipulates that the grain represented will be delivered only upon surrender of the receipt and the payment of accumulated charges. It is signed and countersigned by certain officers of the company, is in nearly all cases negotiable, and, if issued by an approved elevator, is acceptable as a delivery on exchange contracts.

VI. EXCHANGES GIVE THE QUALITY OF MOBILITY TO PRODUCE

The delivery of warehouse receipts on exchange contracts gives to the grain, cotton and produce they represent the same quality of mobility, for purposes of sale or deposit as collateral, as is given to corporate property represented by stocks and bonds listed on our stock exchanges. If it were not for organized markets and the existence of warehouse receipts, the vast quantity of produce lying in warehouses and elevators, aggregating hundreds of millions of dollars, would not be available for business purposes except in a very crude way. If the holders of such produce wished to borrow against it, it would be necessary each time to have the creditor see and inspect the same; and every such inspection would necessitate great inconvenience and unnecessary delay and expense.

At present the greater part of the country's enormous crops is purchased from the farmer by warehouse and elevator men during the three or four months of the crop moving season, and is then gradually sold to the consuming public during the balance of the year. The farmers, as a rule, demand immediate cash payment, although the grain dumped on the market greatly exceeds the current demand. This accumulation of grain in elevators and warehouses, the grain being paid for as soon as it leaves the farmers' hands, requires the expenditure of hundreds of thousands of dollars in excess of the available capital of the buyers, this in turn necessitating on their part extensive borrowing from bankers

against so-called "grain paper." If grain buyers could not borrow against their purchases, it would mean that upon buying a consignment of grain, they would have to transport the same with a view to selling it in another market and wait for the proceeds of the sale before making a new purchase. This might necessitate several weeks' delay. Since their business is a highly competitive one, depending upon the making of a small profit, averaging about one per cent on the present value, such delay would make the grain buyers' business not only an unprofitable one but would greatly handicap them in getting their share of the grain within the three or four months of the crop moving season. To make the grain buying business profitable, it is necessary for the buyers to transact the business on credit, and it is estimated that approximately nine-tenths of the country's grain and cotton crop is originally purchased with borrowed funds.

The ease with which grain buyers under present conditions avail themselves of bankers' credits may be briefly illustrated. Let us assume a grain buyer to be the possessor of \$100,000 of capital for the buying of grain, and that the price during a given period continues to be \$1.00 per bushel. He buys 100,000 bushels of wheat with the intention of forwarding it to the East for sale. To do this will require several weeks, and possibly he may find it desirable or necessary to hold this grain for several months before disposing of the same. Yet the nature of his business demands that he liberate his capital for new purchases long before he sells his present holdings. He proceeds to do this by having his 100,000 bushels of wheat inspected, graded, and represented by a warehouse receipt or a bill of lading. He also has the same insured in a reputable fire insurance company against loss by fire, and "hedged" on some exchange against loss from a decline in price. Then he will take the grain paper, representing his 100,000 bushels, and the fire insurance policy to his banker as collateral security for a loan, and the banker will grant a loan against this grain to the extent of about ninety per cent of its value or \$90,000 according to our assumption. If the banker knows that the grain is hedged, he will know that his risk is greatly reduced, as will be shown in a later section of this paper.

With wheat remaining at \$1.00 per bushel, our grain buyer may immediately purchase another 90,000 bushels, again have the

same inspected, graded, hedged, insured against fire, and represented by receipts. These receipts may again be offered as collateral for a new loan of ninety per cent of the value of the last lot of 90,000 bushels, or \$81,000. With this new credit, the buyer may immediately purchase 81,000 bushels of grain, again have the same inspected, graded, hedged, insured, and represented by receipts, again make a new loan for ninety per cent of its value, purchase immediately another lot of grain, and continue this operation until his original capital has been entirely, or almost entirely, absorbed in margins. Beginning with only \$100,000 capital, this grain buyer has been enabled, through the ease with which grain can be rendered mobile under present conditions, to do a business seven or eight times as large as would be possible under other conditions, and his profits are correspondingly greater. The farmer, on the other hand, has been benefited in that he may dispose of his entire crop within a short time, and on a cash basis, irrespective of the immediate demands of the consuming world. When the grain buyer is ready to begin selling his grain, he will usually sell that lot upon which there is no lien, or which may have been purchased with funds secured on his own notes. Realizing from the proceeds of this sale, he will redeem his loans, gradually releasing one group of collateral after another, thus enabling him to continue selling wheat until he has it all sold.

VII. EXCHANGES FURNISH A CONTINUOUS MARKET

But, it will be asked, why do bankers lend so extensively on grain paper when they know that the price of the grain held as collateral may decline in a week or two by much more than the ten per cent margin? The answer is that they do so partly because the grain may be hedged against such price fluctuations, and also because they know that grain always has a ready market on our produce exchanges, thus affording them ample opportunity at any time, if they deem it necessary, to sell the grain held as collateral before the margin of ten per cent on the loan is exhausted. During every hour of every business day, there is always present on our produce exchanges a group of brokers and speculators always ready to buy and sell, and so numerous as to furnish a continuous market where in the course of a few minutes and with the sacrifice of only a small amount in the price, hundreds of thousands of

bushels of grain may be either bought or sold. This continuous feature of large produce markets serves as a means of insurance to farmers, bankers, grain dealers, speculators and manufacturers in so far that it gives positive assurance to all holders of grain, cotton and produce that, in case of necessity, they can, at a moment's notice, by selling it at approximately the prevailing price, convert that produce into cash.

The existence of such continuous markets is greatly facilitated by the presence of a group of speculators who are willing to buy any supply that may be offered, because in their judgment a profit will be derived by selling it at a future time. The advantage of such continuous buying to the banker has just been explained; and its absolute necessity to all who wish to hedge their holdings of produce will be explained shortly. But a continuous market throughout the year and at reasonably steady prices is also essential to the farmer. As stated, farmers realize upon the larger part of their crops shortly after harvest, and were it not for the large group of buyers who are always willing to take the grain with a view to storing it and selling it for future delivery, it would necessarily follow that prices would fall extremely low at harvest and rise unduly just before harvest. Mr. Merrill, President of the Chicago Board of Trade, suggests that "the testimony of all large grain merchants is that formerly the price of handling grain averaged six, eight and ten cents a bushel, as compared with an average of a two cent margin at the present time." Or it may happen, as Mr. Merrill explains, that "the farmer may have his crop still in the ground or he may have it upon his farm awaiting a time when the roads are in condition to bring it to market, or he may have it stored in an elevator at his own expense waiting for a better price—yet in each of these cases he can, and usually does, dispose of his surplus crops by selling them through a broker upon some board of trade for delivery at a future time."

VIII. THE CONTINUOUS MARKET IN FUTURES AS A MEANS OF INSURANCE TO MANUFACTURERS AGAINST LOSS OF TRADE PROFITS

In much the same way, the miller or manufacturer finds a continuous market of the greatest service. He may receive an order to deliver 5,000 barrels of flour five months from date at a

stipulated price, and not having the wheat on hand wishes to know if he can safely accept the contract. Or his elevator capacity being small, he might desire to make sure of a regular supply of wheat from month to month, and at prices which will be profitable, to keep his mill working to full capacity. Without a continuous market in futures, this miller would be unable to secure his supply months in advance and at definite prices, and every order for the future delivery of flour would be a speculation, unless he actually held the necessary wheat at the time the contract is accepted.

The purchase of grain and its storage prior to the acceptance of orders for the future delivery of flour, however, is entirely unnecessary under present conditions. Suppose that in July a miller receives an order for 5,000 barrels of flour to be delivered within five months (i.e. in November) at say \$6.50 per barrel. As soon as he receives this order, and let us assume that he must acknowledge its acceptance or rejection immediately, he can at once communicate with his broker to ascertain the present price of wheat to be delivered to him, say in the month of October, or in any other month which may suit his convenience. Since the market in futures is a continuous one, he will always find it possible to buy the necessary amount of wheat at a stipulated price. As soon as he is informed of the price at which wheat, deliverable in October, is selling, he can at once determine whether this price will enable him to manufacture flour profitably at \$6.50 per barrel. If he finds the price of wheat satisfactory, he can at once accept the contract for the delivery of the flour in November, at the same time giving his order for the purchase of the requisite amount of October wheat at the prevailing price. Having concluded the two orders, the miller is absolutely certain of his trade profit, irrespective of future fluctuations in prices.

A rise of thirty cents per bushel would more than have wiped out his trade profit had he accepted the order without at once purchasing wheat. This contingency, however, is now eliminated because he has a definite promise to receive the wheat according to the terms of his future contract, the fulfilment of which promise he can secure by a deposit of a margin as already explained. On the other hand, if the price of wheat declines, it may be argued, he would have been better off if he had not purchased the wheat for future delivery. But the miller entered the speculative market

with a view to avoiding speculation. He is after a milling profit only and wishes to run no chances. Having contracted for the future delivery of the flour, he uses the exchange market to buy a corresponding amount of wheat for future delivery at the desired time. The advantage which he would have had, in case wheat declines, in not having purchased in advance, he regards as an insurance premium for the safety secured, just as the manufacturer is willing to pay a premium to an insurance company to relieve himself of the danger of fire, although no fire may occur. What has been explained here for the miller, may also be explained for the maker of cotton goods and many other classes of manufacturers. They buy in advance on exchange markets at definite prices, also accepting contracts for the future delivery of the finished product at definite prices, and are therefore assured of reasonable profits. They have eliminated all gamble by resorting to the speculative market, the burden of risk having been thrown upon those whose business it is to assume speculative risks.

IX. PRODUCE EXCHANGES ARE CLEARING HOUSES OF INFORMATION

Produce exchanges also serve as a world's clearing house for trade and crop information, and in this respect render an invaluable service to producer, middleman and consumer. All our leading crops are produced over such large areas that few individuals have it in their power to keep in daily touch with current crop and trade events except it be in their own particular locality. The prices of nearly all leading cereals are determined by national or world-wide conditions, and the favorable or unfavorable condition of a crop in one locality or country may be so outweighed by the opposite condition elsewhere as to render worthless a price quotation based upon local evidence.

To-day, however, all the leading produce exchanges are in constant touch with crop conditions, weather reports, the movements of grain, changes in freight rates, the rate of consumption, economic legislation, political complications, etc.; and all this information as currently received is given immediate expression in the form of purchases and sales at prices which are immediately transmitted by wire to all the trade centers, and soon made available to the general public by the daily press. Communication by wire and the ticker has connected the world's exchange markets so as to

make them practically one. Only a few minutes will serve to place the leading foreign exchanges and such important American markets as those at Chicago, New York, Minneapolis, Duluth, St. Louis, Kansas City and Toledo in possession of each other's quotations. All the leading exchanges spend thousands of dollars for the prompt acquisition of information. This information covers a very wide range and relates to the size and quality of the growing crops here and abroad, daily changes in the weather, etc., affecting the crops, the volume of sales and the price, the arrival and shipment of cargoes in leading markets and foreign centers, and the "visible supply" here and abroad.

The value of this prompt and elaborate collection of trade information is fourfold, viz.:

(1) IT MAKES POSSIBLE THE DISCOUNTING OF THE FUTURE, i. e., it enables dealers and speculators to exercise their best judgment at once in the form of actual transactions, and thus to reflect this current information in the quotations long before it would otherwise be impressed upon the general public. Thus, the effect of a short or bumper crop upon prices is reflected, i. e., discounted, weeks in advance. The United States Government publishes monthly elaborate crop reports which are given the widest circulation, but it generally happens that these reports cause scarcely a ripple in the market. Dealers have ascertained the condition of the crop long in advance of the government's report, and when the good or bad news becomes common property its effect is apparently lost. The news has already been discounted, and the market has already gradually adjusted itself to a lower or higher level in accordance with the gradual improvement or deterioration of crop conditions. Mr. H. C. Emery states the matter well when, in referring to speculation on our exchanges, he writes: "With this body of keen experts striving by the use of private wires, special agents and every other means, to discover and foresee every other event bearing on values, speculation has been well defined as the struggle of the well-equipped intelligence against the rough power of chance."

(2) IT STEADIES PRICES. The daily discounting of current events makes unnecessary, except in rare instances where manipulation has interfered with the smooth working of the organized market, a sudden decline or rise in price upon the wide publication

of events which have been slowly developing. An elaborate statistical compilation of prices covering a period of 40 years,⁶ one-half of this period ante-dating dealings on exchanges and the other half following the introduction of such exchanges, shows clearly that the fluctuations in the price which the farmer received for his grain or cotton was not nearly so great during the twenty years when exchange markets were in operation as it was prior to the existence of exchanges. As will be explained later, the middlemen who handle the crops use the speculative market to eliminate the risk of price fluctuations by unloading that risk upon a group of speculators instead of on the producer, and can thus give the farmer the best price. In fact, the prices prevailing during the crop-moving months, as illustrated by this statistical investigation, seem so unusually high when compared with the prices of succeeding months, that it is difficult to see how the speculative contingent in the market realized much of a profit.

Without organized exchanges for the immediate discounting of information, the individual producer would find himself in a most defenceless position, unable to know the fair value of his crop from day to day. In this respect the produce exchanges serve the producer in the same way that the stock exchanges benefit the holder of securities. As stated in my article on "The Scope and Functions of the Stock Market": "Without an organized market the farmer would not know the price of his grain from day to day, because transactions, if private, would not be recorded, might be designed to mislead, and certainly would not be representative of the general judgment. He would be exposed to a hundred times the fraud of to-day. He could be easily misled by unscrupulous counsellors into selling his produce far below its fair value. . . . To-day, however, every newspaper of any importance in the country gives daily produce quotations for the day before, and the holder cannot be deceived as to the price. These quotations reflect the average combined judgment of many minds, which is given concrete expression in actual transactions on the floor of the exchange. Through the widespread publicity of such quotations the world over, the holders of grain are given gratis the combined opinion of

⁶See Volume VI of the United States Industrial Commission, 1900.

⁷See *Annals of the American Academy of Political and Social Science*, May, 1910. This quotation has been modified slightly in order to make it applicable to produce exchanges.

the most competent dealers as to the value of that grain at present and its prospective value in the future. Since these dealers have in mind the future rather than the present, their initiative in making purchases and sales will tend to discount the effects of coming events. The holder of the grain, if he be a thinking and observing man, is free to disregard these quotations if he chooses; but if their trend is pronounced they may serve as a guide by which he may regulate his own action relative to the holding or selling of his produce."

The tendency towards steadying price movements and obviating numerous extreme fluctuations is also facilitated by the operations of the bear crowd. The bear in this respect, again serves the same purpose as in the security market, although in a number of other respects, as will be shown later, he is a much more necessary factor in the produce market than in the security market. In the article, just referred to, it was explained that⁸: "Short-selling in the produce market is often of the greatest benefit in repressing rampant speculative enthusiasm on the one hand, and in checking the effect on prices of excessive pessimism on the other. Short sellers do not determine prices. By selling they simply express their judgment as to what prices will be in the future. If their judgment is wrong they will suffer the penalty of being obliged to go into the market and buy the commodity at higher prices. Nine-tenths of the people are by nature 'bulls,' and the higher prices go, the more optimistic and elated they become. If it were not for the group of short sellers, who resist an excessive inflation, it would be much easier than now to raise prices through the roof; and then, when the inflation became apparent to all, the descent would be abrupt and likely unchecked until the basement was reached. The operations of the 'bear,' however, make excessive inflation extremely expensive, and similarly tend to prevent a violent smash, because, the bear to realize his profits, must become a buyer when he covers. . . . Short-selling, instead of unduly depressing prices as many would have us believe is often the most powerful support which the market possesses. It is an ordinary affair to read in the press that the market is sustained or put up at the expense of the 'shorts' who, having contracted to deliver at a certain price can frequently be

⁸ ANNALS, May, 1910. The following quotation has also been altered slightly to correspond to the conditions of the produce market.

driven to 'cover.' Short-selling is thus a beneficial factor in steadying prices and obviating extreme fluctuations. Largely through its action, the discounting of serious and unfavorable events does not take the form of a sudden shock or convulsion, but, instead, is spread out over a period of time, giving the actual holder of produce ample time to observe the situation and limit his loss before ruin results. The constant contest between the judgments of the bulls and the bears is sure to give a much saner and truer level of prices than could otherwise exist. 'No other means,' reports the Hughes' committee, 'of restraining unwarranted marking up and down of prices has been suggested to us'."

(3) IT HELPS TO REGULATE THE RATE AT WHICH THE YEAR'S CROP IS CONSUMED. The modern grain and cotton markets are so organized to-day that the distributing interests in the trade are constantly informed as to the "visible supply" on hand, which may be defined as representing all grain, or any kind of given produce, which is stored in warehouses, elevators, cars or boats, and which is available for purchase. It is a well recognized fact that the exchange quotations for contracts which call for delivery in the new crop months depend not entirely on the prospects of the new crop, but are vitally influenced by the smallness or largeness, as compared with previous years, of the old crop yet unsold, as reflected by the "visible supply," or by statistics relating to holdings which have not yet left the producers' hands.

Owing to the fact that warehouses and elevators in all the important distributing centers are regulated by law or by the rules of the local board of trade, or both, it is possible to collect data periodically as to the holdings of grain. These statistics are published regularly in the form of visible supply tables. The United States Government Crop Reporter publishes such tables for this country and foreign markets. Many of the exchanges collect and publish full tables of this kind, and Bradstreet's Mercantile Agency issues weekly a comprehensive table for various kinds of grain and for approximately seventy cities. Such tables not only enable prospective purchasers to know just where they may look for marketable grain, but also makes it possible for dealers to judge the amount of available grain in the market throughout the country; and, when viewed in connection with similar statistics of former years will serve as a guide in fixing the price, and by doing this exert an effec-

tive influence in regulating the consumption of the crop. If the visible supply, considered in connection with the known stocks of grain still in the farmers' hands, is unusually low as compared with the same supply a year ago, it is likely under normal conditions, that the price will be bid up and consumption decrease, and if unusually high it may be expected that prices will decline and consumption increase. In this way the movement of prices will indirectly benefit the community by regulating consumption so that each year's crop, whether large or small, just happens to meet the needs of the consuming world.

(4) IT SERVES TO LEVEL PRICES BETWEEN DIFFERENT MARKETS. Reference is had here to the practice of "arbitraging" between markets. Arbitraging may be defined as the making of two transactions, one a purchase and the other a sale, in different markets or in the same market between two different subjects of trade, at about the same time with a view to shaving a profit because the price in the one market, or the one subject of trade, is lower than in the other. It is apparent that this practice is made possible only by the quick transmission of quotations from one exchange to another and the existence of continuous markets so large that the purchase in the one market and the sale in the other can be immediately executed. Promptness in knowing and acting is the essence of an arbitrage transaction, and the writer has been told of instances where just a few seconds sufficed to make two deals on separate exchanges located in different cities. It should be added that arbitraging also depends upon the existence of the short sale.

Several methods of arbitraging can be used in the produce market. In the first place, if the arbitrageur knows that wheat is selling lower in Minneapolis than Chicago by an amount greater than he thinks ought to be the case, in view of transportation and other charges, he can use the low market for making an actual purchase of wheat, and at the same time use the high market to sell short an equal amount for future delivery during some convenient month. He may then transport the wheat from the low market to the high market and deliver the same in fulfilment of his short sale. No speculative risk is apparent in this deal. Just as soon as the purchase and sale were executed, and both were made at a definite price, the arbitrageur knows his profit, assuming that he knows the cost of conveying and delivering the actual grain, and

that this cost together with his expenses is less than the difference between the two prices at which he made his transactions. Again, it may happen that at a given time the quotations for wheat on the Minneapolis Chamber of Commerce and the Chicago Board of Trade may be "out of line," i. e. the difference between the two prices may be an unnatural one in view of the cost of transportation and handling which must be taken into account in moving grain from the one city to the other. In that case the arbitrageur, feeling sure that this unnatural difference must soon right itself, may buy a future in the low market, selling the same amount short for future delivery in the high market. Then, *if the two prices come together*, he can close out both of these transactions, and net as a profit the amount represented by the extent that the two prices have come together minus, of course, all expenses. Both transactions in the two markets were, in this case, purely speculative, and no grain was actually transported and delivered. Unlike the first case, the arbitrageur in this instance assumed a speculative risk because, if the prices had not come together or had widened still further, he would have suffered a loss. Moreover, the arbitrageur's opinion may have no reference whatever to the mere highness or lowness of the price; instead it is concerned with the difference between the two prices, irrespective of the general price level, because this may move up and down in the two markets without causing him a loss, provided the difference between the two prices does not widen.

A brief illustration may make this method of arbitraging clearer. Thus let us assume that on a given day in June the price of September wheat on the Minneapolis Chamber of Commerce is \$1.00 per bushel, and the price on the Chicago Board of Trade for the same wheat is \$1.04, and that an arbitrageur considers this difference of four cents too large and anticipates a coming together of the two prices. Accordingly he buys on a future contract in Minneapolis and sells short in Chicago at the prices indicated. Let us now suppose that in the course of a week the Minneapolis price rises to \$1.04 and the Chicago price to \$1.07½, and that the arbitrageur closes his transactions at these prices. By closing out his purchase in Minneapolis by a sale at \$1.04 he makes 4 cents; and by covering his short sale at Chicago by a purchase at \$1.07½ he loses 3½ cents, thus clearing a gross profit of ½ cent, ignoring

expenses, or an amount measured by the extent that the two prices came together. No matter what the fluctuations in the general price level of the two markets may be he will realize a profit from his transactions, provided the original difference of 4 cents between the prices is diminished.

In a manner similar to that just explained a person may arbitrage between two monthly delivery periods, such as September wheat and October wheat, by buying the low and selling the high, and reaping a profit depending again upon the extent that the two prices come together. The same practice may also be extended to two different grades of the same kind of grain, or to two different kinds of grain closely related to each other in so far as their use is concerned, if any unnatural difference in the prices is detected. Of course these arbitrageurs are after a profit, the "eights," which they seek to "shave" out of such deals. They serve, however, to bring the markets to a common level. Their very action—purchasing in the low market and selling in the high market—will itself tend to raise the one and lower the other, until the point is reached where the difference in the price prevailing in the two markets will again reflect the real commercial difference, representing cost of transportation, etc., between the two markets, that should really exist. Through their constant watchfulness all leading markets are kept "in line" with one another. Grain, like water, will seek its level. It will move from the center where it is plentiful to where it is not plentiful. Instead of chaos we are given a harmonious relationship between different markets between grades, between the several monthly delivery periods, and even between different kinds of grain.

X. HEDGING

It has already been explained that large produce exchanges give to producers and middlemen the benefits of insurance, (1) in furnishing a continuous market at all times where holders of grain or produce may immediately convert the same into cash, and (2) by enabling manufacturers to protect their trade profits by contracting for the future delivery of produce at definite prices. But of equal or even greater importance to the business community than the buying of produce for actual delivery at some desired future time is the common practice, adopted by all leading interests

in the grain, cotton and in provision markets, of "hedging" against loss through fluctuations in prices. This important function of organized exchanges, it should again be remembered, is made possible only through the existence, on the one hand, of the "future" contract and "short selling," and, on the other, of a speculative class operating in a large continuous market.

Hedging may be defined as the practice of making two contracts at about the same time of an opposite, though corresponding nature, the one in the *trade* market, and the other in the *speculative* market. A purchase in the actual grain market of a certain amount of grain at a certain price is promptly offset by a short sale in the speculative market on some large exchange of the same amount of grain for some convenient future month's delivery, with a view to cancelling any losses that might result from fluctuations in price. As soon, however, as the *trade* transaction is terminated by a sale, the speculative short sale must also be terminated, i. e. covered, by a purchase on the exchange. Both contracts are entered into at about the same time, and both must be terminated at about the same time if the hedger wishes to avoid speculation.

In explaining this process of hedging let us consider the needs of a grain dealer, who, for example, purchases 100,000 bushels of wheat in August at \$1.00 a bushel; and who, as is a customary practice, has made this purchase with borrowed funds to the extent of 90 per cent of the purchase price, the banker holding the grain paper as collateral for the loan. The banker is protected because he knows that at any time he can, owing to the existence of a large continuous market, sell out the buyer. But what shall we say of the grain dealer's risk? Is he not running a tremendous risk by buying so much wheat on a 10 per cent margin when in the course of a week or two, owing to world wide conditions over which he has no control, wheat may decline from 10 to 20 cents per bushel? If there were not some way in which he can insure himself against such a contingency it would be doubtful if our large elevator companies could remain in business for any length of time, especially with their trade profit, under present competitive conditions, limited to one or two cents per bushel. In fact the leading interests in the grain business have testified before Government Committees that hedging is absolutely necessary to enable them to continue in business, and here it may be repeated that a

hedging operation cannot be conducted without executing a short sale.

Now just as soon as this grain dealer purchases the wheat in the actual wheat market he at once gives an order to sell short on some exchange an equal amount in the speculative market for, let us say, September delivery. These two transactions are entirely distinct. The grain dealer does not intend to deliver the wheat he actually holds in fulfilment of this short sale. Now let us suppose that wheat rises to \$1.10 per bushel. In that case he has a profit of 10 cents per bushel on the wheat he owns, since he purchased it at \$1.00. But, as we have seen, the price of wheat is a world price made such by the operation of arbitrageurs, and there is every reason to believe that if the price of cash wheat rises 10 cents a bushel the September option will also have a rise of 10 cents, or approximately that amount. Since the grain dealer sold short an equal amount in the speculative market he suffers a loss on that transaction of 10 cents per bushel. The profit on his *trade* transaction is cancelled by his loss on the paper transaction. On the other hand, supposing that wheat declines 10 cents per bushel, the grain dealer loses 10 cents upon his trade wheat, but the 10 cents lost here will be cancelled by the 10 cent rise on the short transaction. In other words whether wheat should rise to \$2.00 per bushel or decline to 50 cents a bushel, this dealer is always even as regards the given market. Whatever he makes by price fluctuations on the wheat he holds is lost on his paper transaction and vice versa. If, when September arrives, he finds that circumstances are such as to make it necessary or desirable to hold his wheat longer, he may close out his September short sale in the speculative market and at once enter into another sale for a later month. This shifting of hedging transactions from one month to another month is a very common practice, although where the party interested is not the holder of a seat on the exchange, it involves accumulating commission charges.

The question will at once be asked, since the dealer is always even, how does he make his profit? Here we must distinguish clearly between the *trade profit* and the *speculative profit*. This grain dealer wishes to avoid speculative risks and therefore makes use of the speculative market for the purpose of hedging. His business consists in conveying his wheat, let us say, from Chicago

to New York, and it is in the handling and the transportation of the grain from this market to another market that he expects to make a *trade profit*, which is the result of his knowledge of the business and his ability to render this particular service in competition with other dealers. If we consult the financial page of our newspaper, it will be noticed for example that while September wheat is selling in Chicago on a given day at 98¼ cents per bushel the same wheat is selling in New York at \$1.04¼ or at a difference of 6 cents a bushel. In all of the leading cities of the country, as already noticed, grain quotations on the same day will differ. But let us see what this difference of 6 cents includes. It will include, of course, transportation from Chicago to New York, cost of handling, etc., but among all the other items represented by this difference is the *profit* which those in the grain shipping business expect to make. They are in business to make this legitimate profit and it is reflected in the difference between the price in New York and the price prevailing at any leading distributing centers of the interior.

Now let us assume that wheat, which in Chicago was selling at 98¼ cents and in New York at \$1.04¼, declines 20 cents in Chicago, or to 78¼ cents. As regards the wheat in Chicago we have seen that the holder cannot lose because he has hedged. Now other things being equal, the price of grain all over the country goes up and down together, fluctuations on the Chicago Board of Trade for example being reflected in the New York market in the course of a few minutes. In other words a 20 cent decline in Chicago will be reflected in New York, and if wheat in Chicago drops to 78¼ cents, the price in New York, under normal conditions, and in view of our illustration, will be 84¼ cents. Yet there is still the difference of 6 cents between the Chicago and New York quotations, and this difference still includes the trade profit. In other words the grain dealer by hedging has absolutely protected himself against speculative fluctuations, and, on the other hand, since the margin of difference between the quotations in different cities remains about the same he is still assured of his trade profit.

The explanation given here will apply differently in different industries to meet the needs of those who wish to use the exchange for hedging purposes. Thus if a manufacturer wishes to buy cotton from a commission man before the cotton crop has matured, this dealer, although he may not own the cotton, may nevertheless sell

1,000 bales of cotton short for December delivery at, let us say, 11½ cents. He probably charged 11½ cents because he knew that he could at once order his broker to buy 1,000 bales of cotton on the exchange at 11 cents a pound. He has thus added ½ cent to the price as covering all necessary expenses and his *trade profit*. In this case it will be noticed that the hedging operation is the reverse of our previous illustration, the speculative transaction being a purchase and the trade transaction a short sale. Now when the time comes for the dealer to deliver this cotton the price, owing to a severe drought, may have risen to 16 cents per pound. When the time for delivery arrives he will go into the actual cotton market and buy 1,000 bales at 16 cents per pound, and, having sold it at 11½ cents per pound, he is out 4½ cents. But at the time when he buys the cotton in the real market for delivery he orders his broker to close his transaction on the exchange by a sale of the 1,000 bales. Having bought on the exchange at 11 cents he now asks his broker to sell at 16 cents, and has a profit of 5 cents per pound. Having lost 4½ cents on the one transaction and made 5 cents on the other he has his one-half cent profit. It should be stated again that whenever the dealer closes his transaction in the actual market he must at once also close the corresponding transaction in the speculative market.

In the same way a manufacturer may be the holder of a large stock of finished cotton goods, or a miller of flour. He is unable to sell the goods and fears a decline in price. Possibly a large decline would compel him to sacrifice the greater part of his stock. Other things being equal, however, the price of the finished goods and the raw material out of which they are manufactured, will rise and fall together. In that case the manufacturer may hedge by holding the finished cloth or flour and selling short that amount of cotton or wheat which is necessary to make the goods he holds. Consequently if he loses on his finished goods because the price goes down, he will make about the equivalent amount on his short sale because cotton or wheat will also decline. Having sold short he will reap a profit on this sale, available at any time because of the existence of a continuous market.

Even the farmers, who as a class, are usually loudest in their complaints of the operation of the exchanges, are among the greatest gainers through the practice of hedging. As Mr. C. L.

Griesemer recently pointed out in an article on "Scientific Hedging": "Where the farmer wants to sell his crop all at once believing the present prices are too good to let get away from him, but has the grain all on his farm and asks for thirty days delivery or more, and the dealer who has been getting his business refuses to take it, unwilling to run the risk not knowing how to eliminate it, his competitor does, and by hedging shifts the risk to the speculator, assuring himself of the working profit which he is legitimately entitled to. Then again where a farmer is bullish, which seems to be a habit with most of them, he will haul it in early in the season and store it, sometimes paying storage but many times not. In some localities the man that refuses to store does not get very much grain to handle and the one that does would have something pretty large in the way of an elevator if he expected to hold all the grain and keep running. Instead of putting up a big structure that would never pay for itself, he keeps shipping that grain to market and as fast as it is sold protects himself and the farmers by taking on hedges. In this way he eliminates the shrinkage caused by drying and vermin and insurance and so forth that would result in case he kept the grain himself.

"Even so, some one will say, even when hedged a spread is liable to wipe out your profit. That is true, but then in how many kinds of business is every deal absolutely sure to make a profit. The thing to do is to find the method that will be the most likely to show up a credit rather than a debit. If all the dealers could influence their customers to make business conditions perfect, hedging would not be necessary, but every business man has to deal with nature which although it has been working toward perfection, is still some distance from the end of this process of evolution."

Were it not possible for large elevator companies and exporters to hedge their holdings of grain the farmer would be unable to dump his large crops, as at present, on the market within the three months of the crop moving season and receive cash therefor. No class of middlemen could be induced to take a year's harvest within so short a time and hold it for gradual distribution during the balance of the year; and if any cared to be such reckless gamblers it is doubtful if bankers would care to finance their operations. Without the hedging privilege elevator owners and grain dealers would be obliged to discount the enormous risk assumed in buying

large quantities of grain, and, to be on the safe side, would have to make allowance for the worst contingency anticipated by offering the farmer a much smaller price for his grain than is now given. It is generally maintained by the leading interests in the market that without the hedging privilege farmers would get an average price at least 10 per cent less than that prevailing to-day.

In insurance it is a well recognized principle that the substitution of *certainly* for *uncertainty* reduces the cost of practically all commodities by diminishing that part of the cost of production which producers and distributors must necessarily set aside as a fund for protection against risk; and just as the assumption of the fire hazard by large insurance companies can be shown to benefit both producer and consumer, so in the grain and cotton business the assumption of the risk of loss through price fluctuations by a group of speculators can be shown to benefit both producer and consumer. The producer of grain is given the highest price since he is not compelled to protect the buyer against the risk of loss through a decline in price while the buyer is compelled to hold the grain; and the consumer, likewise, and for the same reason, is given the lowest price. By throwing the burden of risk on the shoulders of a speculative class, grain dealers are assured a fair and legitimate trade profit, and, be it said, that in no class of commodities, known to the writer, is the margin of difference (for the middle-men) between the producer's price and the consumer's price so small as in those which are extensively dealt in on our large competitive exchange markets. Even the banker is vitally concerned in the additional safeguard which hedging gives to his loans on grain collateral. As pointed out in the recent report of the Commissioner of Corporations on "Cotton Exchanges": "This opportunity for hedging is, indeed, regarded by practically all cotton merchants as almost an absolute necessity in modern methods of conducting business. An idea of the value of the hedging function may be obtained when it is stated that in Great Britain banks very generally refuse to loan money on cotton which is not hedged. Moreover, it is almost universally conceded that, since the introduction of hedging, failures in the cotton trade, which had previously been frequent, have been materially reduced as the direct result of the greater stability with which transactions in spot cotton can be conducted."

Mr. David R. Forgan, president of the National City Bank of Chicago, recently made the statement that: "Warehouse receipts for grain, or anything else that finally becomes human food are, in my opinion, the best possible collateral for bank loans. I have seen the time more than once when high class stocks and bonds, and even government bonds, could not be readily sold, but I have never seen the time, nor do I ever expect to see it, when anything that has to be eaten could not be sold. The warehouse receipts therefore, above alluded to, constitute a collateral which is always available for the payment of debts. Furthermore, if the grain or provisions represented by warehouse receipts are already sold for future delivery, that fact adds a great element of strength to the loan, because there is a third party obligated to take the grain at a certain time for a given price. When I lived in Minneapolis I had the only unpleasant experience I have ever had in connection with the elevator business. A terminal elevator concern filled its elevators with wheat, and thinking that the market was likely to go up they did not 'hedge' it by selling for future delivery. In other words, they speculated on their wheat. The market, however, had a large and sudden drop, with the result that the elevator concern failed, and the bank with which I was connected made a loss. The present method, therefore, of carriers of grain or provisions selling them for future delivery is a highly satisfactory one to the banks whose money is loaned to the carriers. The sale for future delivery is the final link in the chain that makes such loans the best in the world."

In its essence, therefore, hedging is insurance against a real and ever-present hazard in business. Each leading produce exchange, such as the Chicago Board of Trade or the Minneapolis Chamber of Commerce, renders in this respect a function as legitimate and useful as our life and fire insurance companies; in fact they should be regarded as among the greatest insurance institutions in existence. Here a type of risk is underwritten so dangerous that no private insurance company has ever ventured to underwrite the same. For a holder of large amounts of grain and cotton not to enter the speculative market for hedging purposes is to be a speculator of the worst kind, yes a gambler. The risk of losing the customary small trade profit, and many times more than this, must be apparent when we reflect that each year's crop

is financed to 90 per cent of its value on borrowed funds, and that values often change within a week or two by many times the trade profit expected. The hazard is a dangerous one, and the chance of a heavy loss ratio many times greater than that connected with any other known form of insurance.

Legislators, who each year so glibly introduce bills to prohibit short selling, and express themselves so eloquently against the evils of speculation, should bear in mind that the practice of hedging, for the reason mentioned, is now almost universal in the grain and cotton trade. Evils exist to be sure, and many complaints are even heard from hedgers themselves about the faulty character of the type of contract used on certain exchanges. Thousands of innocent "lambs," also, are shorn each year for participating in a business about which they are woefully ignorant and which they are best qualified to leave entirely alone. These facts are to be regretted, and it is hoped will be remedied or diminished in time. A close examination, however, will show that these evils are either local in character and may be changed, or are unnecessary accompaniments to the operation of our organized markets as now constituted. They do not detract from the great functions of exchanges, and do not justify anything more than reform.

When denouncing speculation, short selling and exchanges in general, let us bear in mind that dealers and exporters hedge nearly all their sales, and that manufacturers, likewise, do so extensively. Over 90 per cent of the grain in the large western centers is thus protected on the exchanges of Chicago, Kansas City, Minneapolis, and St. Louis. Fully 90 per cent of the cotton shipped to Liverpool is hedged there or in New York and New Orleans. Nothing is so common as to see references made to the fact that on the Chicago Board of Trade the entire wheat crop of the country is sold several times over in a single year, and that most of the transactions must therefore be fictitious since they do not involve the actual delivery of the grain. But this large volume of transactions need cause no surprise when we reflect that the same grain in passing from the farmer to the commission man, the elevator owner, exporter, and finally the miller, is sold against by each one of these interests. Many illustrations may be cited where the same grain, in passing from the farmer to the consumer, is hedged a half dozen times, and each hedging transaction involves

two deals, first a sale, and later a purchase. The volume of dealing on the Chicago Board of Trade is further increased by the common practice of transferring hedges from one month's delivery period to another when convenience makes this desirable, and each such transfer involves another sale, and later, when covered, a purchase. Then, too, the Chicago market, because of its size, is used extensively for hedging purposes by all the leading grain centers of Europe, and, it is said, even of Argentina.

XI. PRIVILEGES

"Privileges" afford another means of insurance, though of less importance in this respect than hedging. A "privilege" may be defined as a contract which gives the purchaser of the same the privilege of compelling the seller of the contract to deliver or to receive, as the case may be, a certain amount of produce at a certain price and within a definitely prescribed time. Frequently such contracts are known as "options." They are to be distinguished from "futures" in so far that the terms of the future contract must be complied with before the expiration of the last day of the month in which delivery is specified; while in the case of a privilege the purchaser of the same may exercise his discretion as to whether he wishes the contract to be fulfilled, i. e., under certain circumstances the buyer of a privilege may find it convenient to permit his option to lapse, whereas, under other circumstances he may find it advantageous to enforce the agreement against the seller.

Several forms of privileges exist, but only two need special mention, viz.: the "put" and the "call." The "put" gives the purchaser the right, in consideration of the premium paid, to make the seller of the same take from him a certain amount of produce at a certain price and within a stipulated time, provided he wishes to exercise this right. A "call," on the other hand, is just the reverse of the "put" and gives the purchaser of the same, in consideration of a premium paid, the privilege of compelling the seller to deliver to him within a definitely prescribed time a certain amount of produce at a stipulated price, provided he finds it advantageous to exercise this right. Occasionally, a third form of privilege is used, viz: the "straddle," which is simply a combination of the "put" and the "call" and which gives the buyer of the same the right to

make the seller either deliver to him, or take from him a certain amount of produce at a certain price and within a given time.

The "put" and the "call," it is clear, can be used to great advantage as a means of limiting losses. In actual practice, however, such agreements have been greatly abused, and have been used largely for betting purposes by those who have really no occasion to employ the same. Because of this fact some of the exchanges, and a considerable number of states have prohibited the use of such agreements. Test votes, however, among the members of some of the exchanges where such agreements are prohibited by state statute, show that their re-establishment in those markets is desired. In many instances where the law will not permit their use, members of the exchange frequently purchase the same by wire in another city. Thus Milwaukee is known as a market for such agreements, while in the New York stock market, most of the business in privileges is done in London, which is known as the greatest market for such agreements in the world.

The application of privileges to business transactions will be briefly described. The "put" may be used advantageously by speculators who own produce or securities which they are holding for a rise and which they wish to protect against a decline in price. Thus assuming wheat to be selling at \$1.00 per bushel, the holder of such wheat might purchase a "put," according to which the seller, in consideration of a premium of \$10.00 binds himself to take from the buyer within one month 10,000 bushels at, say, 97 cents per bushel. The terms of this agreement will vary according to the conditions prevailing in the market. Ordinarily the premium remains a constant, but the time during which the seller of the "put" is willing to take the grain and the price which he binds himself to pay for the same will be changed to meet market conditions. The price stipulated in the "put" is always below the market price, thus giving the seller a margin of safety. In the above illustration the price agreed on was 97 cents while wheat was selling at \$1.00 per bushel; hence the seller of the "put" knows that the buyer will have no inducement to exercise his privilege until wheat declines below 97 cents. If the price reaches a point lower than that agreed upon in the "put" the buyer, of course, will find it profitable to make the seller take the same. It is here that the "put" lends itself to betting purposes, because a speculator, although holding no grain,

may purchase this "put" anticipating a decline in the market. His loss is definitely limited, while if the decline in price should be extensive, he can enter the market and purchase the 10,000 bushels at the lower price and compel the seller of the put to take the same at the agreed higher price. Of course sellers of "puts" will use their best judgment in making the conditions of the agreement such as to net them a profit in the long run. The conditions stipulated in the "put" will depend upon the nature of the market, i. e., whether it is dull or wild, the nature of the produce under consideration, and the length of time during which the agreement runs. It is apparent that larger fluctuations will occur in a period of one month than within a period of one week, and that such fluctuations will also be greater during periods of great speculative excitement than during a dull season.

"Calls" should be serviceable chiefly to the short seller who, as we have seen, is an absolutely essential factor in the market, and who sells something which he does not own. Thus, if 10,000 bushels of wheat is sold short at \$1.00 per bushel, the short seller might purchase a "call" according to which the seller in consideration of a premium of \$10.00, will give the seller the right to make him deliver to the buyer 10,000 bushels of wheat within one month at \$1.03 per bushel. In this case the buyer of the "call" will not exercise the same unless wheat should rise higher than \$1.03. If this should happen he will limit his loss by exercising the call and receive the 10,000 bushels at the price of \$1.03. The seller of the call, it will be observed, has again fortified himself with a margin of 3 cents per bushel, i. e., the price at which he has agreed to deliver wheat is placed somewhat higher than the current market price. Of course, the seller of this call, as also the seller of the put, depend upon the continuous market for the operation of their business. If called upon to deliver the wheat the seller of the call may go into the market and buy the same, whereas if the seller of the put is made to take the wheat he, in turn, may at once go into the market and sell the same.

A sufficient explanation of the put and the call has been given to show that both may, under proper conditions, be used as a means of limiting losses. In the case of the put just described the purchaser has limited his loss to 3 cents per bushel or \$300.00 plus the premium of \$10.00. Similarly, in the case of the call just described

the purchaser cannot lose more than \$310.00, assuming the financial solvency of the seller. Should the price movement, however, result favorably to the purchaser of the put or the call, he may allow his profits to run, refusing to exercise his "privilege." In that case his loss in purchasing the privilege is limited to the premium paid. It should also be stated here that speculators frequently use the so-called "stop loss" order, another method of limiting losses, according to which an order is placed with a broker somewhat below or above the market, as the case may be, with instructions that if the price should reach the "stop loss" limit the order should be executed.